PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 733971	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. **PCT**/AU2004/001667	International filing date *(day/month/year)* 26 November 2004	Priority date *(day/month/year)* 28 November 2003

International Patent Classification (IPC) or national classification and IPC

Int. Cl.

See supplemental box.

Applicant

THE UNIVERSITY OF QUEENSLAND et al

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. [X] *(sent to the applicant and to the International Bureau)* a total of 36 sheets, as follows:
      - [X] sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      - [ ] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. [ ] *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

[X]	Box No. I	Basis of the report
[ ]	Box No. II	Priority
[X]	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
[ ]	Box No. IV	Lack of unity of invention
[X]	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
[X]	Box No. VI	Certain documents cited
[ ]	Box No. VII	Certain defects in the international application
[X]	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
28 June 2005	21 March 2006
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **L.F. MCCAFFERY** Telephone No. (02) 6283

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2004/001667

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

[X] The international application in the language in which it was filed

[ ] A translation of the international application into , which is the language of a translation furnished for the purposes of:

[ ] international search (under Rules 12.3(a) and 23.1 (b))

[ ] publication of the international application (under Rule 12.4(a))

[ ] international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

[ ] the international application as originally filed/furnished

[X] the description:

pages **1-6, 8-10, 13-21, 22-111** as originally filed/furnished

pages* **7, 7a, 11, 12, 12a, 21a** received by this Authority on **28 June 2005** with the letter of **27 June 2005**

pages* received by this Authority on with the letter of

[X] the claims:

pages as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* **112-141** received by this Authority on **28 June 2005** with the letter of **27 June 2005**

pages* received by this Authority on with the letter of

[X] the drawings:

pages **1/4-4/4** as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

[ ] a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. [ ] The amendments have resulted in the cancellation of:

[ ] the description, pages

[ ] the claims, Nos.

[ ] the drawings, sheets/figs

[ ] the sequence listing *(specify)*:

[ ] any table(s) related to the sequence listing *(specify)*:

4. [ ] This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

[ ] the description, pages

[ ] the claims, Nos.

[ ] the drawings, sheets/figs

[ ] the sequence listing *(specify)*:

[ ] any table(s) related to the sequence listing *(specify)*:

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2004/001667

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos: **1 to 5, 50 to 53, 79 to 81 (all in part)**

because:

☐ the said international application, or the said claims Nos.
relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos.
are so unclear that no meaningful opinion could be formed *(specify)*:

☐ the claims, or said claims Nos.
are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*

☒ no international search report has been established for said claim Nos. **1 to 5, 50 to 53, 79 to 81 (all in part)**

☐ A meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

- ☐ Furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
- ☐ Furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
- ☐ Pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13*ter*.1(a) or (b) and 13*ter*.2.

☐ A meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions, and such tables were not available to the International Preliminary Examining Authority in a form and manner acceptable to it

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2004/001667

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	**6 to 27, 54, 58**	**YES**
	Claims	**1 to 5, 28 to 53, 55 to 57, 59 to 83**	**NO**
Inventive step (IS)	Claims	**6 to 27, 54, 58**	**YES**
	Claims	**1 to 5, 28 to 53, 55 to 57, 59 to 83**	**NO**
Industrial applicability (IA)	Claims	**1 to 83**	**YES**
	Claims		**NO**

2. Citations and explanations (Rule 70.7)

The following citations are referred to in this report:

D1 WO 2003/032921

D2 WO 2001/018171

D3 Peptide Science, 1998, 35th, pp. 181-184

D1 and D2 disclose histone deacetylase inhibitors corresponding to the present compounds in which Z is methylene. D3 discloses the compound Ac-L-Asu(NHOH)-NHBzl. The citations further disclose the use of such compounds in treating cancers. Specific compounds disclosed in these citations have been excluded from the present claims by proviso. However the citations provide an enabling disclosure of a broad genus that is encompassed by the present claims and their use as anti-cancer agents, so that the exclusion of specific compound does not necessarily confer novelty and inventive step. Accordingly Claims 1 to 5, 28 to 53, 55 to 57, 59 to 83 lack novelty and inventive step.

However there is no disclosure of compounds having Z as a sulphur atom. Accordingly Claims 6 to 27, 54 and 58 are novel and inventive.

The claims are considered industrially applicable in view of the purported pharmaceutical activity of the compounds.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2004/001667

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date *(day/month/year)*	Filing date *(day/month/year)*	Priority date (valid claim) *(day/month/year)*
(PX) D4 WO 2004/089293	21/10/2004	01/04/2004	01/04/2003

D4 discloses histone deacetylase inhibitors corresponding to the present compounds in which Z is methylene and in which one of Y and XR7 includes a benzyl, quinolinyl or isoquinolyl group. The compounds may be used in the treatment of cancer. This renders present claims 1 to 5, 28 to 53, 55 to 57, 59 to 83 lacking in novelty for similar reasons to those in relation to D1 and D2.

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure *(day/month/year)*	Date of written disclosure referring to non-written disclosure *(day/month/year)*

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 to 5, 50 to 53 and 79 to 81 lack full support. In particular, these claims include the definition of R1 as a linker group whilst the specification only provides adequate support for the use of alkyl linking groups, and also include the definition of M as a zinc-binding group, whilst the specification only provides support for hydroxaminc acid groups in this position.

Claim 28 defines the radicals R2 and R3, but these are not given in the formula. It appears that they were intended to be substituents on the hydroxamate group.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: IPC Marks

C07C 323/47 (2006.01)	*A61K 31/4468* (2006.01)	*C07D 213/75* (2006.01)
A61K 31/16 (2006.01)	*A61K 31/47* (2006.01)	*C07D 213/82* (2006.01)
A61K 31/198 (2006.01)	*A61K 31/4706* (2006.01)	*C07D 215/38* (2006.01)
A61K 31/34 (2006.01)	*A61K 31/4709* (2006.01)	*C07D 215/40* (2006.01)
A61K 31/381 (2006.01)	*A61K 31/4965* (2006.01)	*C07D 231/56* (2006.01)
A61K 31/4015 (2006.01)	*A61P 35/00* (2006.01)	*C07D 235/14* (2006.01)
A61K 31/404 (2006.01)	*C07C 259/06* (2006.01)	*C07D 241/24* (2006.01)
A61K 31/4184 (2006.01)	*C07D 207/28* (2006.01)	*C07D 277/62* (2006.01)
A61K 31/428 (2006.01)	*C07D 209/14* (2006.01)	*C07D 295/185* (2006.01)
A61K 31/4402 (2006.01)	*C07D 209/42* (2006.01)	*C07D 307/68* (2006.01)
A61K 31/4406 (2006.01)	*C07D 211/58* (2006.01)	*C07D 333/38* (2006.01)
A61K 31/4406 (2006.01)	*C07D 213/40* (2006.01)	*C07D 401/12* (2006.01)

optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

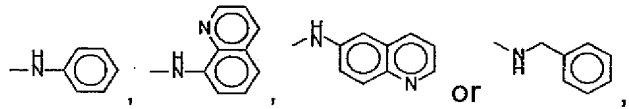
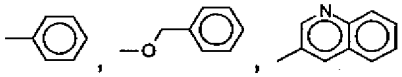
t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1;

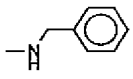
R_7 is a group of formula:

$$(R_{16})_z\text{-}(R_{15})_y\text{-}(R_{14})_x—$$

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl,

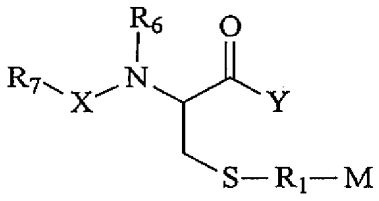
x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1.

Preferably, when Z is CH_2 and Y is  , then R_6 is not H, X is not  and R_7 is not  , or $–OC(CH_3)_3$; and

when Z is CH_2 and Y is  , then R_6 is not H, X is not and R_7 is not $–CH_3$.

In one particular embodiment of the invention the compound having the formula (I) is based on cysteine. Accordingly, the embodiment of the invention provides

a compound of formula (IIa), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



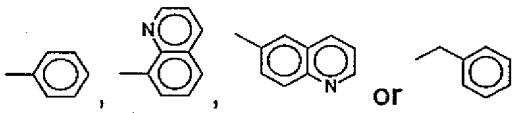
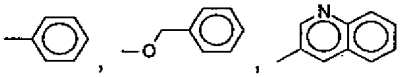
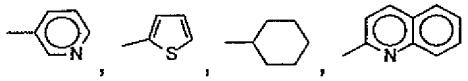
(IIa)

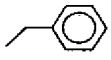
wherein R_1, R_6, R_7, M, X and Y are as defined above for the compound of formula (I).

In another embodiment of the invention the compound having the formula (I) is based on 7-substituted 2-amino-heptanoates. Accordingly, the embodiment of

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl;

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1.

Preferably, when Z is CH_2 and R4 or R5 is  , then R_6 is not H, X is not  and R_7 is not  ,  or $-OC(CH_3)_3$; and

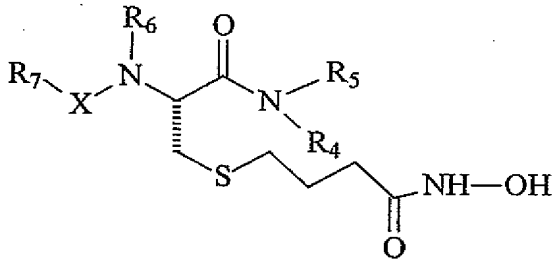
when Z is CH_2 and R4 or R5 is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

Even within this preferred subset of compounds there are a number of preferred values for each of the variables in the structural formula given above. For example it is preferred that R_1 is optionally substituted C_1-C_4 alkyl, more preferably optionally substituted C_2-C_3 alkyl, even more preferably optionally substituted C_3 alkyl, most preferably propyl.

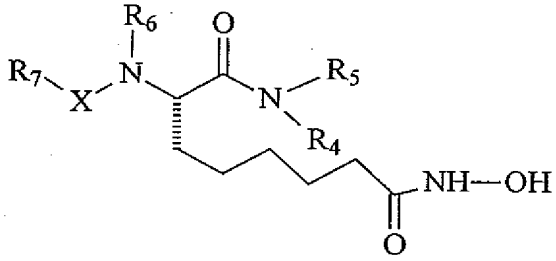
It is preferred that R_2 is either H, optionally substituted C_1-C_4 alkyl or a nitrogen protecting group, more preferably H or a nitrogen protecting group, most preferably H.

It is preferred that R_3 is either H, optionally substituted C_1-C_4 alkyl or an oxygen protecting group, more preferably H or an oxygen protecting group, most preferably H.

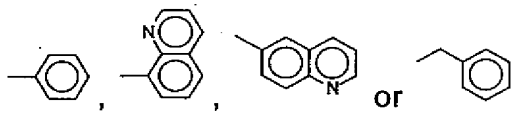
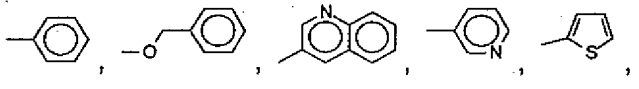
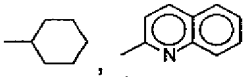
Particularly preferred compounds of formula (III) are therefore those of formula (IIIa) and (IIIb).

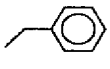


(IIIa)



(IIIb)

Preferably, when R4 or R5 is  , then R_6 is not H, X is not  and R_7 is not  ,  or $-OC(CH_3)_3$; and

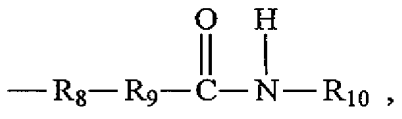
when R4 or R5 is  , then R_6 is not H, X is not and R_7 is not $-CH_3$.

In the compounds of the invention it is preferred that X is a carbonyl group.

It is preferred that R_5 is either H or optionally substituted alkyl, preferably H.

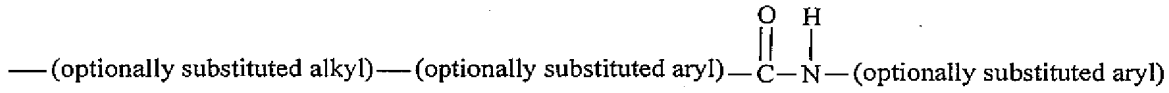
It is preferred that R_6 is either H or a nitrogen protecting group, most preferably H.

In one preferred embodiment the group R_4 is of the formula

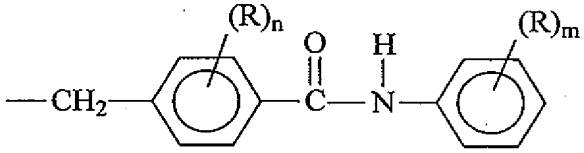


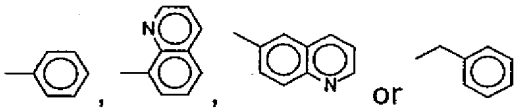
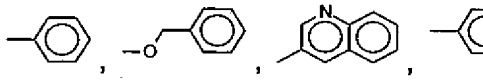
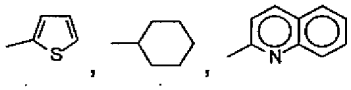
wherein R_8, R_9 and R_{10} are as defined above.

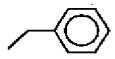
In this embodiment it is particularly preferred that R_4 is of the formula:



In the most preferred form of this embodiment R_4 is a group of the formula.

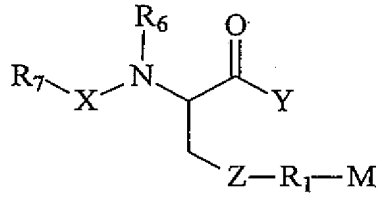


Preferably, when Z is CH_2 and Y is  , then R_6 is not H, X is not  and R_7 is not  ,  or $-OC(CH_3)_3$; and

when Z is CH_2 and Y is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

The claims defining the invention are as follows:

1. A compound having the formula (I), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



(I)

wherein

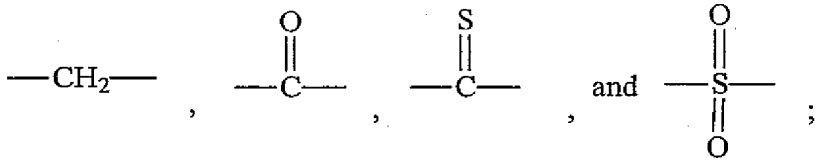
Z is S or CH_2;

R_1 is a linking moiety;

M is a zinc binding moiety containing at least one heteroatom;

R_6 is selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl and a nitrogen protecting group;

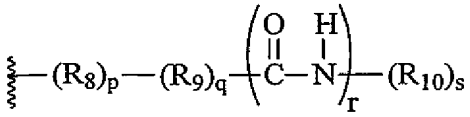
X is selected from the group consisting of:



;

Y is selected from the group consisting: of $-NR_4R_5$, $-OR_4$, $-SR_4$, $-CH_2R_4$, CHR_4R_5, $C(R_4)_2R_5$, PHR_4 and PR_4R_5,

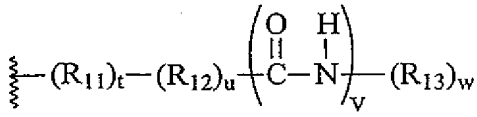
wherein R_4 is a group of formula:



wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl;

p, q, r and s are each independently 0 or 1, provided that at least one of p, q or s is 1;

R_5 is H or a group of formula:



wherein R_{11}, R_{12} and R_{113} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1;

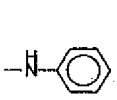
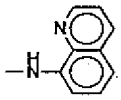
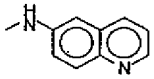
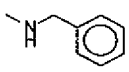
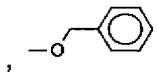
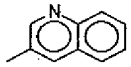
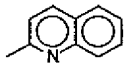
R_7 is a group of formula:

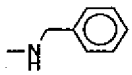
$(R_{16})_z$-$(R_{15})_y$-$(R_{14})_x$—

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl,

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1,

with the proviso that:

when Z is CH_2 and Y is  ,  ,  or  , then R_6 is not H, X is not  and R_7 is not  ,  ,  ,  ,  ,  ,  or $-OC(CH_3)_3$; and

when Z is CH_2 and Y is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

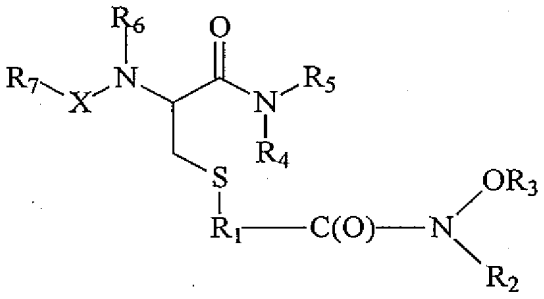
2. A compound as in claim 1, wherein the zinc binding moiety is a group of formula $-C(O)-NR_2-OR_3$ where R_2 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, or a nitrogen protecting group and R_3 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl or an oxygen protecting group.

3. A compound as in claim 2, wherein the linking moiety has between 1 and 9 atoms in the normal chain.

4. A compound as in claim 3, wherein the linking moiety has between 1 and 4 atoms in the normal chain.

5. A compound as in claim 4, wherein the linking moiety is an n-propyl chain.

6. A compound having the formula (IIIa), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



(IIIa)

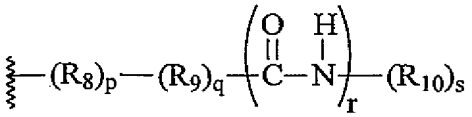
wherein

R_1 is optionally substituted C_1-C_4 alkyl, optionally substituted C_1-C_4 alkenyl or optionally substituted C_1-C_4 alkynyl;

R_2 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, or a nitrogen protecting group;

R_3 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl or an oxygen protecting group;

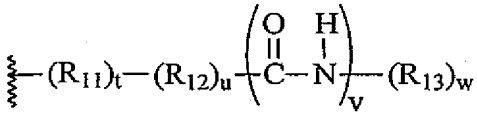
R_4 is a group of formula:



wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl;

p, q, r and s are each independently 0 or 1, provided that at least one of p, q or s is 1;

R_5 is H or a group of formula:

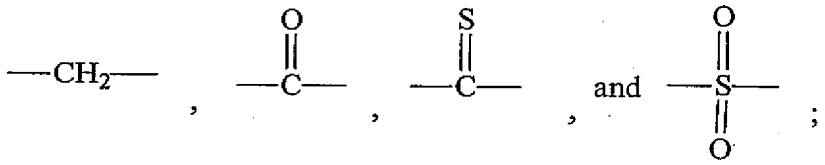


wherein R_{11}, R_{12} and R_{113} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1.

R_6 is selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl and a nitrogen protecting group;

X is selected from the group consisting of



;

R_7 is a group of formula:

$$(R_{16})_z\text{-}(R_{15})_y\text{-}(R_{14})_x—$$

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl;

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1.

7. A compound as in claim 6, wherein R_1 is optionally substituted C_1-C_4 alkyl.

8. A compound as in claim 7, wherein R_1 is n-propyl.

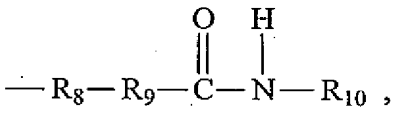
9. A compound as in claim 6, wherein R_2 is either H, optionally substituted C_1-C_4 alkyl or a nitrogen protecting group.

10. A compound as in claim 9, wherein R_2 is H.

11. A compound as in claim 6, wherein R_3 is either H, optionally substituted C_1-C_4 alkyl or an oxygen protecting group.

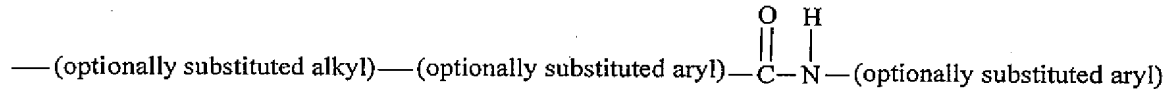
12. A compound as in claim 11, wherein R_3 is H.

13. A compound as in claim 6, wherein R_4 is of the formula:

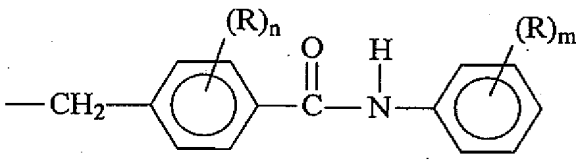


wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl.

14. A compound as in claim 13, wherein R_4 is of the formula:



15. A compound as in claim 14, wherein R_4 is a group of the formula.

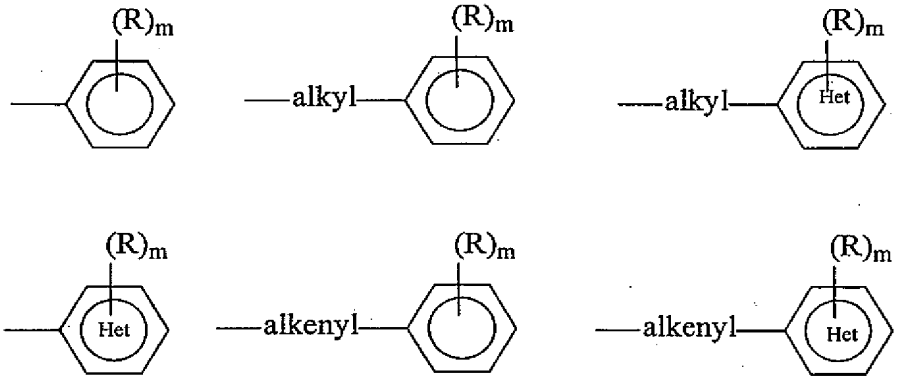


wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl, heteroarylacyl, acylamino, diacylamino, acyloxy, alkylsulphonyloxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

n is 0-4, and

m is 0-5.

16. A compound as in claim 13, wherein R_4 has one of the following formulae:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl,

haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alkiysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphnyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each m is from 0-5.

17. A compound as in claim 6, wherein R_5 is either H or optionally substituted alkyl.

18. A compound as in claim 17, wherein R_5 is H.

19. A compound as in claim 6, wherein X is a carbonyl group.

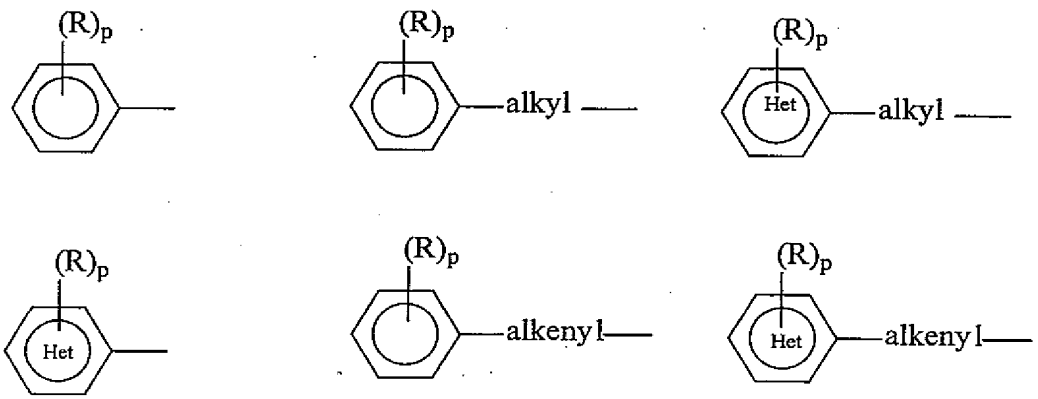
20. A compound as in claim 19, wherein R_6 is either H or a nitrogen protecting group.

21. A compound as in claim 20, wherein R_6 is H.

22. A compound as in claim 19, wherein R_7 is selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, optionally substituted cycloalkyl, optionally substituted heteroaryl, optionally substituted heterocycloalkyl, optionally substituted aryl alkyl, optionally substituted heteroaryl alkyl, optionally substituted cycloalkyl alkyl, optionally substituted heterocycloalkyl alkyl, optionally substituted aryl alkenyl, optionally substituted

hetero alkenyl, optionally substituted cycloalkyl alkenyl, optionally substituted heterocycloalkyl alkenyl, optionally substituted aryl alkynyl, optionally substituted heteroaryl alkynyl, optionally substituted cycloalkyl alkynyl, and optionally substituted heterocycloalkyl alkynyl.

23. A compound as in claim 22, wherein R_7 has one of the following formula:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alklysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each p is from 0-5.

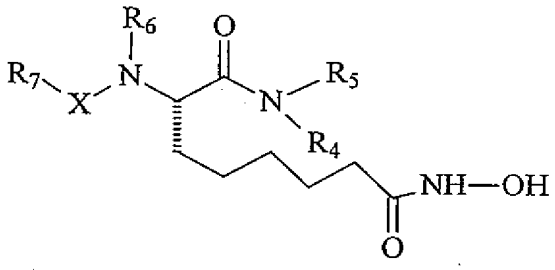
24. A compound as in claim 6, wherein the compound has a potency of cytotoxicity of $IC_{50} \leq 10$ μM against MM96 melanoma cells.

25. A compound as in claim 24, wherein the compound has a Selectivity Index of ≥ 1.5.

26. A compound as in claim 25, wherein the compound has a potency of $IC_{50} \leq 1$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 3.

27. A compound as in claim 26, wherein the compound has a potency of $IC_{50} \leq 0.5$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 4.

28. A compound having the formula (IIIb), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



(IIIb)

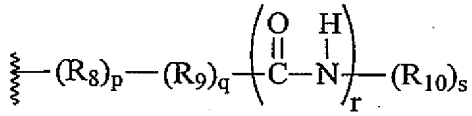
wherein

R_1 is optionally substituted C_1-C_4 alkyl, optionally substituted C_1-C_4 alkenyl or optionally substituted C_1-C_4 alkynyl;

R_2 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, or a nitrogen protecting group;

R_3 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl or an oxygen protecting group;

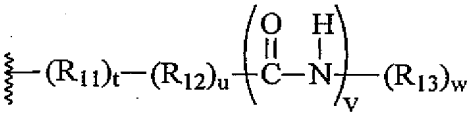
R_4 is a group of formula:



wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl;

p, q, r and s are each independently 0 or 1, provided that at least one of p, q or s is 1;

R_5 is H or a group of formula:

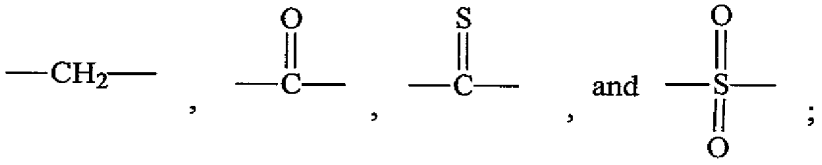


wherein R_{11}, R_{12} and R_{113} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1.

R_6 is selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl and a nitrogen protecting group;

X is selected from the group consisting of



;

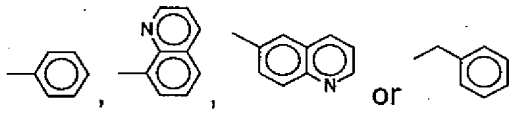
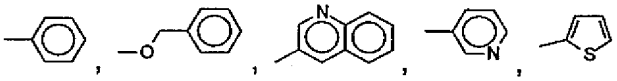
R_7 is a group of formula:

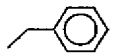
$$(R_{16})_z\text{-}(R_{15})_y\text{-}(R_{14})_x—$$

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl;

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1,

with the proviso that:

when R4 or R5 is  , then R_6 is not H, X is not  and R_7 is not  or $-OC(CH_3)_3$; and

when R4 or R5 is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

29. A compound as in claim 28, wherein R_1 is optionally substituted C_1-C_4 alkyl.

30. A compound as in claim 29, wherein R_1 is n-propyl.

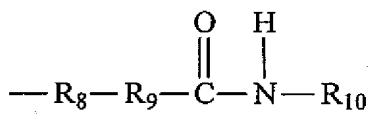
31. A compound as in claim 28, wherein R_2 is either H, optionally substituted C_1-C_4 alkyl or a nitrogen protecting group.

32. A compound as in claim 31, wherein R_2 is H.

33. A compound as in claim 28, wherein R_3 is either H, optionally substituted C_1-C_4 alkyl or an oxygen protecting group.

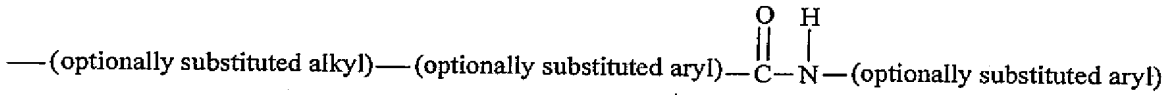
34. A compound as in claim 33, wherein R_3 is H.

35. A compound as in claim 28, wherein R_4 is of the formula:

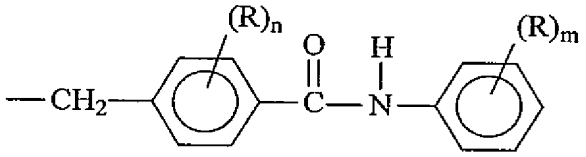


wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl.

36. A compound as in claim 35, wherein R_4 is of the formula:



37. A compound as in claim 36, wherein R_4 is a group of the formula.

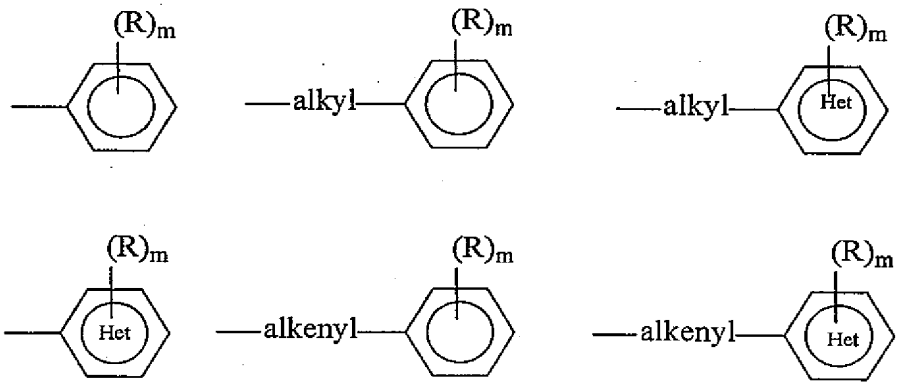


wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl, heteroarylacyl, acylamino, diacylamino, acyloxy, alkylsulphonyloxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

n is 0-4, and

m is 0-5.

38. A compound as in claim 35, wherein R_4 has one of the following formulae:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alklysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphnyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each m is from 0-5.

39. A compound as in claim 28, wherein R_5 is either H or optionally substituted alkyl.

40. A compound as in claim 39, wherein R_5 is H.

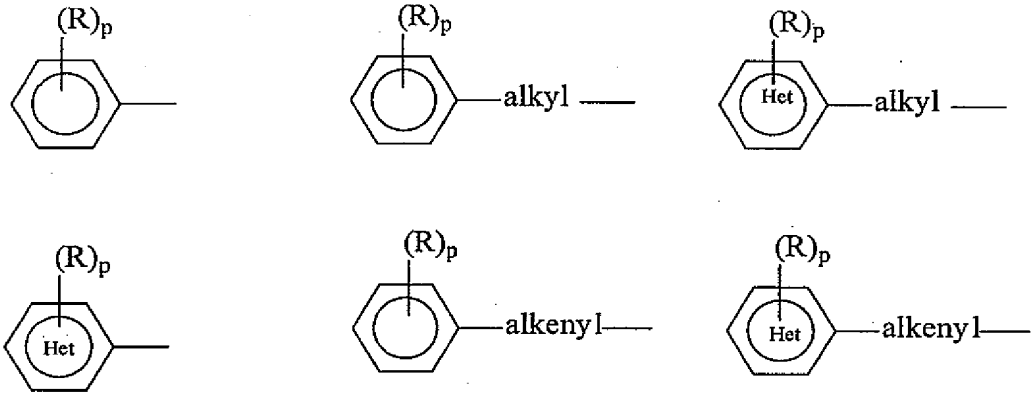
41. A compound as in claim 28, wherein X is a carbonyl group.

42. A compound as in claim 41, wherein R_6 is either H or a nitrogen protecting group.

43. A compound as in claim 42, wherein R_6 is H.

44. A compound as in claim 41, wherein R_7 is selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, optionally substituted cycloalkyl, optionally substituted heteroaryl, optionally substituted heterocycloalkyl, optionally substituted aryl alkyl, optionally substituted heteroaryl alkyl, optionally substituted cycloalkyl alkyl, optionally substituted heterocycloalkyl alkyl, optionally substituted aryl alkenyl, optionally substituted hetero alkenyl, optionally substituted cycloalkyl alkenyl, optionally substituted heterocycloalkyl alkenyl, optionally substituted aryl alkynyl, optionally substituted heteroaryl alkynyl, optionally substituted cycloalkyl alkynyl, and optionally substituted heterocycloalkyl alkynyl.

45. A compound as in claim 44, wherein R_7 has one of the following formula:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alklysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each p is from 0-5.

46. A compound as in claim 28, wherein the compound has a potency of cytotoxicity of $IC_{50} \leq 10$ μM against MM96 melanoma cells.

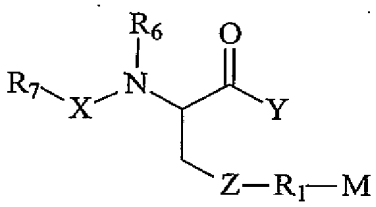
47. A compound as in claim 46, wherein the compound has a Selectivity Index of ≥ 1.5.

48. A compound as in claim 47, wherein the compound has a potency of $IC_{50} \leq 1$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 3.

49. A compound as in claim 48, wherein the compound has a potency of $IC_{50} \leq 0.5$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 4.

50. A method for the treatment of cancer in an animal, the method including the step of administering to the animal in need of such treatment an effective

amount of a compound having the formula (I), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



(I)

wherein

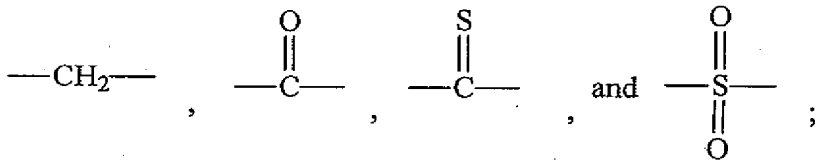
Z is S or $-CH_2-$;

R_1 is a linking moiety;

M is a zinc binding moiety containing at least one heteroatom;

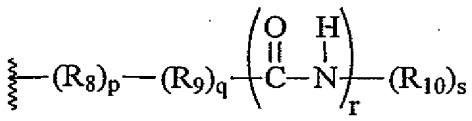
R_6 is selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl and a nitrogen protecting group;

X is selected from the group consisting of:



Y is selected from the group consisting: of $-NR_4R_5$, $-OR_4$, $-SR_4$, $-CH_2R_4$, CHR_4R_5, $C(R_4)_2R_5$, PHR_4 and PR_4R_5,

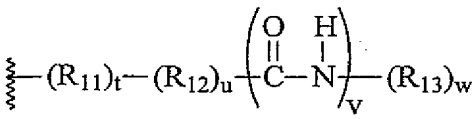
wherein R_4 is a group of formula:



wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl;

p, q, r and s are each independently 0 or 1, provided that at least one of p, q or s is 1;

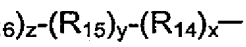
R_5 is H or a group of formula:



wherein R_{11}, R_{12} and R_{113} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1;

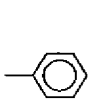
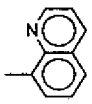
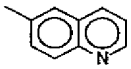
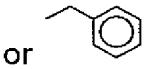
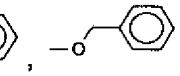
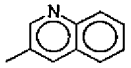
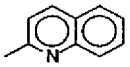
R_7 is a group of formula:

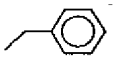


wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl,

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1,

with the proviso that:

when Z is CH_2 and Y is  ,  ,  or  , then R_6 is not H, X is not  and R_7 is not  ,  ,  ,  ,  ,  ,  or $-OC(CH_3)_3$; and

when Z is CH_2 and Y is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

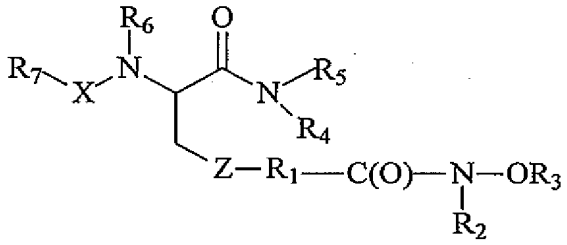
51. A method as in claim 50, wherein the linking moiety has between 1 and 9 atoms in the normal chain.

52. A method as in claim 51, wherein the linking moiety has between 1 and 4 atoms in the normal chain.

53. A method as in claim 52, wherein the linking moiety is an n-propyl chain.

54. A method as in claim 50, wherein Z is S.

55. A method for the treatment of cancer in an animal, the method including the step of administering to the animal in need of such treatment an effective amount of a compound having the formula (III), or a pharmaceutically acceptable derivative, salt, racemate, isomer or tautomer thereof:



(III)

wherein

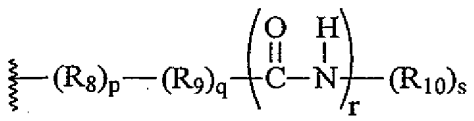
Z is S or CH_2;

R_1 is optionally substituted C_1-C_4 alkyl, optionally substituted C_1-C_4 alkenyl or optionally substituted C_1-C_4 alkynyl;

R_2 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, or a nitrogen protecting group;

R_3 is H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl or an oxygen protecting group;

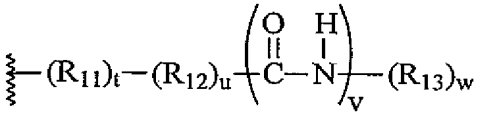
R_4 is a group of formula:



wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl;

p, q, r and s are each independently 0 or 1, provided that at least one of p, q or s is 1;

R_5 is H or a group of formula:

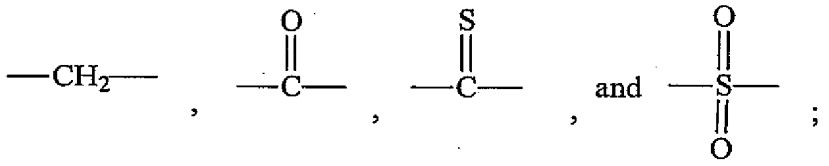


wherein R_{11}, R_{12} and R_{113} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted heterocycloalkyl;

t, u, v and w are each independently 0 or 1, provided that at least one of t, u and w is 1;

R_6 is selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl and a nitrogen protecting group;

X is selected from the group consisting of



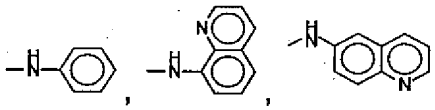
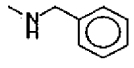
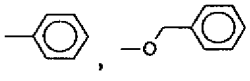
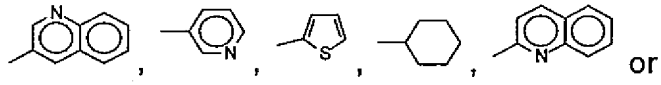
R_7 is a group of formula:

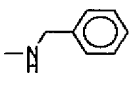
$$(R_{16})_z\text{-}(R_{15})_y\text{-}(R_{14})_x—$$

wherein R_{14}, R_{15} and R_{16} are independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl and optionally substituted heterocycloalkyl,

x, y and z are independently 0 and 1 with the proviso that at least one of x, y and z is 1,

with the proviso that:

when Z is CH_2 and R_4 or R_5 is  or  , then R_6 is not H, X is not and R_7 is not  ,  or $-OC(CH_3)_3$; and

when Z is CH_2 and R_4 or R_5 is  , then R_6 is not H, X is not  and R_7 is not $-CH_3$.

56. A method for the treatment of cancer as in claim 55, wherein R_1 is optionally substituted C_1-C_4 alkyl.

57. A method for the treatment of cancer as in claim 56, wherein R_1 is propyl.

58. A method for the treatment of cancer as in claim 55, wherein Z is S.

59. A method for the treatment of cancer as in claim 55, wherein R_2 is either H, optionally substituted C_1-C_4 alkyl or a nitrogen protecting group.

60. A method for the treatment of cancer as in claim 59, wherein R_2 is a nitrogen protecting group.

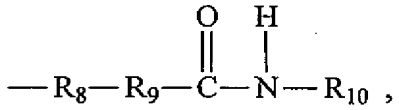
61. A method for the treatment of cancer as in claim 59, wherein R_2 is H.

62. A method for the treatment of cancer as in claim 55, wherein R_3 is either H, optionally substituted C_1-C_4 alkyl or an oxygen protecting group.

63. A method for the treatment of cancer as in claim 62, wherein R_3 is an oxygen protecting group.

64. A method for the treatment of cancer as in claim 62, wherein R_3 is H.

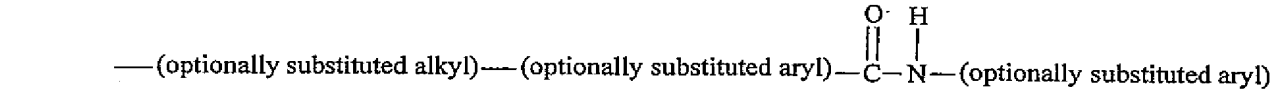
65. A method for the treatment of cancer as in claim 55, wherein R_4 is of the formula:



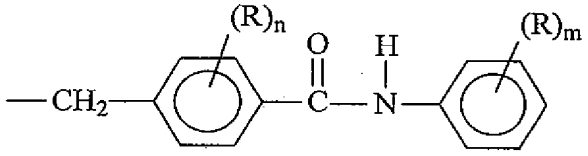
wherein R_8, R_9 and R_{10} are each independently selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl,

optionally substituted alkynyl, optionally substituted cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, and optionally substituted heterocycloalkyl.

66. A method for the treatment of cancer as in claim 65, wherein R_4 is of the formula:



67. A method for the treatment of cancer as in claim 66, wherein R_4 is a group of the formula.

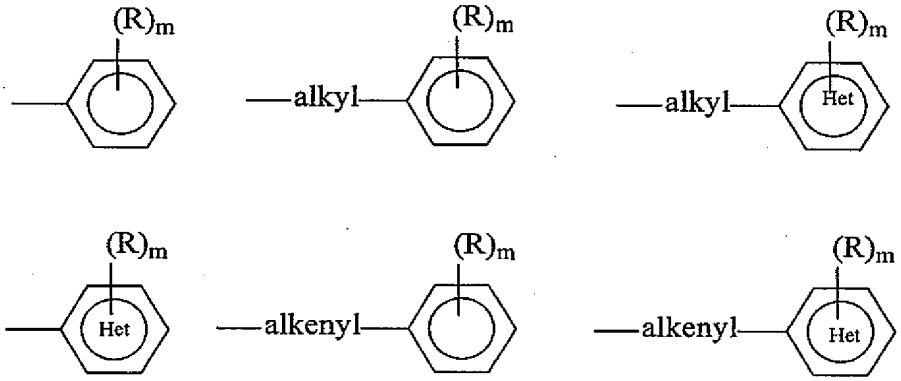


wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl, heteroarylacyl, acylamino, diacylamino, acyloxy, alkylsulphonyloxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

n is 0-4, and

m is 0-5.

68. A method for the treatment of cancer as in claim 66, wherein R_4 has one of the following formulas:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alklysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphnyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each m is from 0-5.

69. A method for the treatment of cancer as in claim 55, wherein R_5 is either H or optionally substituted alkyl.

70. A method for the treatment of cancer as in claim 69, wherein R_5 is H.

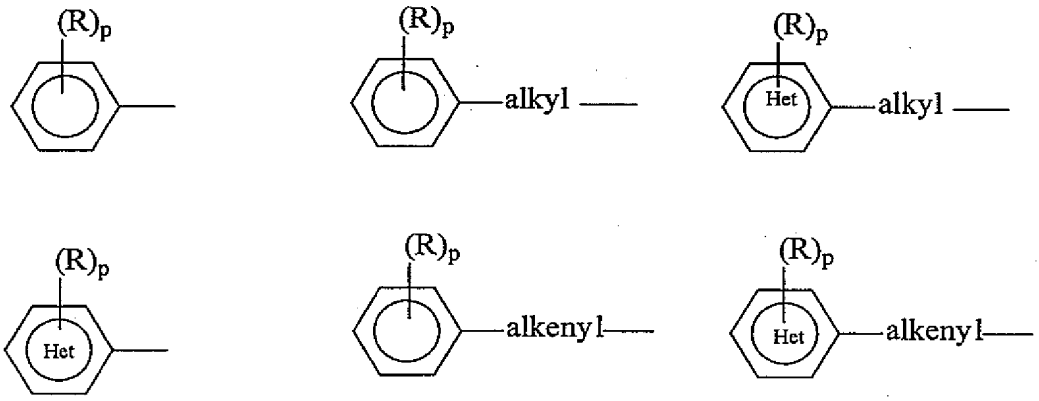
71. A method for the treatment of cancer as in claim 55, wherein X is a carbonyl group.

72. A method for the treatment of cancer as in claim 71, wherein R_6 is either H or a nitrogen protecting group.

73. A method for the treatment of cancer as in claim 72, wherein R_6 is H.

74. A method for the treatment of cancer as in claim 71, wherein R_7 is selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, optionally substituted aryl, optionally substituted cycloalkyl, optionally substituted heteroaryl, optionally substituted heterocycloalkyl, optionally substituted aryl alkyl, optionally substituted heteroaryl alkyl, optionally substituted cycloalkyl alkyl, optionally substituted heterocycloalkyl alkyl, optionally substituted aryl alkenyl, optionally substituted hetero alkenyl, optionally substituted cycloalkyl alkenyl, optionally substituted heterocycloalkyl alkenyl, optionally substituted aryl alkynyl, optionally substituted heteroaryl alkynyl, optionally substituted cycloalkyl alkynyl, and optionally substituted heterocycloalkyl alkynyl.

75. A method for the treatment of cancer as in claim 74, wherein R_7 has one of the following formula:



wherein each R is independently selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, halo, haloalkyl, haloalkenyl, haloalkynyl, haloaryl, haloheteroaryl, halocycloalkyl, haloheterocycloalkyl, hydroxy, alkoxy, alkenyloxy, aryloxy, heteroaryloxy, cycloalkyloxy, heterocycloalkyloxy, benzyloxy, haloalkoxy, haloalkenyloxy, haloaryloxy, halohetoraryloxy, nitro, nitroalkyl, nitroalkenyl, nitroalkynyl, nitroaryl, nitroheteroaryl, nitroheterocyclyoalkyl, amino, alkylamino, dialkylamino, alkenylamino, alkynylamino, arylamino, heteroarylamino, diarylamino, benzylamino, dibenzylamino, acyl, alkenylacyl, alkynylacyl, arylacyl,heteroarylacyl, acylamino, diacylamino, acyloxy, alklysulphonlyoxy, arylsulphonyloxy, heterocycloalkylamino, alkylsulphonyl, arylsulphonyl, carboalkoxy, carboaryloxy, alkylthio, benzylthio, acylthio, cyano, nitro, sulfate and phosphate;

and each p is from 0-5.

76. A method for the treatment of cancer as in claim 55, wherein the compound has a potency of cytotoxicity of $IC_{50} \leq 10$ μM against MM96 melanoma cells.

77. A method for the treatment of cancer as in claim 76, wherein the compound has a Selectivity Index of ≥ 1.5.

78. A method for the treatment of cancer as in claim 77, wherein the compound has a potency of $IC_{50} \leq 1$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 3.

79. A method for the treatment of cancer as in claim 78, wherein the compound has a potency of $IC_{50} \leq 0.5$ μM against the MM96 melanoma cells and a Selectivity Index of ≥ 4.

80. A method for the treatment of cancer as in claim 55, wherein the animal is a human.

81. A pharmaceutical composition containing one or more of the compounds of any one of claims 1 to 49 and a pharmaceutically acceptable, carrier, diluent or excipient.

82. The use of a compound of any one of claims 1 to 49 for the preparation of a medicament for the treatment of cancer.

83. A compound according to claim 1 and substantially as hereinbefore described with reference to the accompanying examples.